

1 We claim:

2
3 1. A metal sheet punch device for use with metal sheeting
4 for roofs, ceilings and walls comprising:

5
6 a longitudinally extended frame having forward and rearward ends;

7
8 alignment means mounted on said frame adjacent said forward and
9 rearward ends for aligning said frame on a metal sheet;

10
11 at least two metal punch devices mounted on said frame, each of
12 said metal punch devices including;

13
14 a metal punch support structure movably mounted on said frame,
15 said metal punch support structure movable between a
16 retracted position and an extended position relative to
17 said frame;

18
19 a metal punch having a pointed lower end, said metal punch
20 mounted on the underside of said metal punch support
21 structure;

22
23 support structure drive means mounted on said frame and
24 operatively connected to said metal punch support
25 structure to move said metal punch support structure
26 between said retracted position and said extended
27 position; and
28

1 trigger means operatively connected to said at least two metal
2 punch devices, said trigger means operative to trigger said
3 support structure drive means to drive each of said metal
4 punch support structures from said retracted position to said
5 extended position such that said metal punches each engage a
6 metal sheet on which said metal sheet punch device is
7 positioned and form at least two indentations in the metal
8 sheet by impact of said metal punches with the metal sheet.
9

10 2. The metal sheet punch device of claim 1 wherein said
11 longitudinally extended frame comprises a pair of generally
12 parallel frame plates spaced from one another and supported apart
13 from and connected to one another by a plurality of spacer rods.
14

15 3. The metal sheet punch device of claim 1 wherein said
16 alignment means mounted on said frame adjacent said forward end
17 comprises at least one mounting arm extending forwards and
18 downwards from said frame, an alignment plate mounting bar mounted
19 on the forward end of said at least one mounting arm and an
20 alignment plate mounted on said alignment plate mounting bar
21 including a screw engagement slot formed in the forward end of said
22 alignment plate, said screw engagement slot operative to fit over
23 and engage a securement screw which has already been mounted in the
24 metal sheet thereby aligning the forward end of said frame with an
25 already positioned securement screw.
26

27 4. The metal sheet punch device of claim 1 wherein said
28 alignment means mounted on said frame adjacent said rearward end

1 comprises a pair of downwardly depending rear alignment bars
2 mounted on opposite sides of said frame and extending downward
3 below the base of said frame such that when said frame is placed on
4 a metal sheet, said rear alignment bars are positioned outside of
5 the edge of the metal sheet to depend downwards over the underlying
6 roof frame beam on which the metal sheet is to be mounted, thereby
7 aligning the rearward end of said frame with the underlying roof
8 frame beam.

9
10 **5.** The metal sheet punch device of claim **1** wherein said
11 metal punch support structure of each of said at least two metal
12 punch devices comprises at least one punch support bar having a
13 rearward end pivotably mounted on said frame, said metal punch
14 mounted on a forward end of said at least one punch support bar.

15
16 **6.** The metal sheet punch device of claim **1** wherein said
17 support structure drive means of each of said at least two metal
18 punch devices comprises a spring.

19
20 **7.** The metal sheet punch device of claim **1** wherein said
21 support structure drive means of each of said at least two metal
22 punch devices comprises a pneumatic piston.

23
24 **8.** The metal sheet punch device of claim **1** wherein said
25 support structure drive means of each of said at least two metal
26 punch devices comprises an hydraulic ram.

27
28 **9.** The metal sheet punch device of claim **1** wherein each of

1 said at least two metal punch devices further comprise an actuating
2 arm mounted on and extending outwards from said metal punch support
3 structure, said actuating arm including an L-shaped slot formed
4 therein.

5
6 **10.** The metal sheet punch device of claim 9 wherein said
7 trigger means comprises a trigger actuating arm movably mounted on
8 said frame, a trigger bar rotatably mounted on said frame and
9 operatively connected to said trigger actuating arm and an
10 actuating arm bolt housed within said L-shaped slot of said
11 actuating arm, said actuating arm bolt operative slide within said
12 L-shaped slot and alternatively frictionally and mechanically
13 engage and release to trigger said support structure drive means to
14 drive said metal punch support structure from said retracted
15 position to said extended position to impact a metal sheet section
16 to create a securement screw indentation.

17
18 **11.** The metal sheet punch device of claim 1 wherein said
19 trigger means is operative to generally simultaneously trigger each
20 of said at least two metal punch devices.

1 **12.** A metal sheet punch device for use with metal sheeting
2 for roofs, ceilings and walls comprising:

3
4 a longitudinally extended frame having forward and rearward ends;
5
6 forward and rearward alignment means mounted on said frame adjacent
7 said forward and rearward ends for aligning said frame on a
8 metal sheet;

9
10 at least two metal punch devices mounted on said frame, each of
11 said metal punch devices including;

12
13 a metal punch support structure movably mounted on said frame,
14 said metal punch support structure movable between a
15 retracted position and an extended position relative to
16 said frame;

17
18 a metal punch having a pointed lower end, said metal punch
19 mounted on the underside of said metal punch support
20 structure;

21
22 spring means mounted on said frame and connected to said metal
23 punch support structure to rapidly and forcefully move
24 said metal punch support structure between said retracted
25 position and said extended position; and

26
27 trigger means operatively connected to said at least two metal
28 punch devices, said trigger means operative to trigger said

1 spring means to drive each of said metal punch support
2 structures from said retracted position to said extended
3 position such that said metal punches each engage a metal
4 sheet on which said metal sheet punch device is positioned and
5 form at least two indentations in the metal sheet by impact of
6 said metal punches with the metal sheet.

7
8 **13.** The metal sheet punch device of claim **12** wherein said
9 longitudinally extended frame comprises a pair of generally
10 parallel frame plates spaced from one another and supported apart
11 from and connected to one another by a plurality of spacer rods.

12
13 **14.** The metal sheet punch device of claim **12** wherein said
14 alignment means mounted on said frame adjacent said forward end
15 comprises at least one mounting arm extending forwards and
16 downwards from said frame, an alignment plate mounting bar mounted
17 on the forward end of said at least one mounting arm and an
18 alignment plate mounted on said alignment plate mounting bar
19 including a screw engagement slot formed in the forward end of said
20 alignment plate, said screw engagement slot operative to fit over
21 and engage a securement screw which has already been mounted in the
22 metal sheet thereby aligning the forward end of said frame with an
23 already positioned securement screw.

24
25 **15.** The metal sheet punch device of claim **12** wherein said
26 alignment means mounted on said frame adjacent said rearward end
27 comprises a pair of downwardly depending rear alignment bars
28 mounted on opposite sides of said frame and extending downward

1 below the base of said frame such that when said frame is placed on
2 a metal sheet, said rear alignment bars are positioned outside of
3 the edge of the metal sheet to depend downwards over the underlying
4 roof frame beam on which the metal sheet is to be mounted, thereby
5 aligning the rearward end of said frame with the underlying roof
6 frame beam.

7
8 **16.** The metal sheet punch device of claim **12** wherein said
9 metal punch support structure of each of said at least two metal
10 punch devices comprises at least one punch support bar having a
11 rearward end pivotably mounted on said frame, said metal punch
12 mounted on a forward end of said at least one punch support bar.

13
14 **17.** The metal sheet punch device of claim **12** wherein each of
15 said at least two metal punch devices further comprise an actuating
16 arm mounted on and extending outwards from said metal punch support
17 structure, said actuating arm including an L-shaped slot formed
18 therein.

19
20 **18.** The metal sheet punch device of claim **17** wherein said
21 trigger means comprises a trigger actuating arm movably mounted on
22 said frame, a trigger bar rotatably mounted on said frame and
23 operatively connected to said trigger actuating arm and an
24 actuating arm bolt housed within said L-shaped slot of said
25 actuating arm, said actuating arm bolt operative slide within said
26 L-shaped slot and alternatively frictionally and mechanically
27 engage and release to trigger said support structure drive means to
28 drive said metal punch support structure from said retracted

1 position to said extended position to impact a metal sheet section
2 to create a securement screw indentation.

3
4 **19.** The metal sheet punch device of claim **12** wherein said
5 trigger means is operative to generally simultaneously trigger each
6 of said at least two metal punch devices.